

**RECEIVED**

OCT 15 2012

**SUPERFUND DIVISION**

***Ambient Air Monitoring Report***

***Rivermines  
Park Hills, Missouri***

***Prepared for  
The Doe Run Company***

***July 2012***



1001 Diamond Ridge Suite 1100  
Jefferson City, MO 65109  
Phone: (573) 638-5000  
Fax: (573) 638-5001

07CR



40405209

Superfund

2.0

0U02



October 10, 2012

Mr. Mark Nations  
The Doe Run Company  
P.O. Box 1633  
Desloge, Missouri 63601

**Re: Ambient Air Monitoring Report – Rivermines Site**

Dear Mr. Nations:

Please find attached the July 2012 “*Ambient Air Monitoring Report*” for The Doe Run Company at the Rivermines Sites, located near Park Hills, Missouri.

This report will include the following:

- **Glossary of Terms** – Listing of the abbreviations used for each parameter and unit.
- **Ambient Air Quality Standards** – Lists the maximum allowable concentrations for the measured parameters.
- **TSP, Lead & PM<sub>10</sub> Particulate Summaries** – Includes the averages of each monitored parameter, which relates to the federal standards.
- **Particulate and Lead Analysis Spreadsheets.**
- **Lab Results (lead & cadmium)** – Lab reports from Inovatia Laboratories, LLC.
- **Meteorological Data Printouts** – This supplies printouts of each parameter.

Barr Engineering Company offers this report as an independent laboratory. This includes the weighing of filters, obtaining lead and cadmium analysis, compiling the data, and preparing the report. No interpretation of the data or analysis of the results is implied or intended. Should you have any questions regarding this report, please call.

Respectfully,

A handwritten signature in black ink that reads "Richard J. Campbell".

Richard J. Campbell, PE  
Chemical Engineer  
Senior Environmental Consultant

c: Kathy Rangen  
Jason Gunter  
Ty Morris

## GLOSSARY OF TERMS

$\mu\text{g}/\text{m}^3$	Micrograms per Cubic Meter
mph	Miles per Hour
Wind Direction	Degrees from True North
TSP	Total Suspended Particulate
PM <sub>10</sub>	Particulate Matter - 10 Microns or Less
mmHg	Millimeters of Mercury

## NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

PM <sub>10</sub> – Particulate Matter	24-Hour*	Annual Maximum	150 $\mu\text{g}/\text{m}^3$
Lead	Calendar Quarter	Arithmetic Mean	1.5 $\mu\text{g}/\text{m}^3$
Lead	Rolling 3-Month Average	Arithmetic Mean	0.15 $\mu\text{g}/\text{m}^3$

TSP (Total Suspended Particulate) – There are no Federal Standards that apply solely for TSP.

\*This standard must be exceeded more than once a year to constitute a violation.



## TSP and Lead Concentration Summary

Rivermines  
Park Hills, Missouri

2012

Date	TSP Big River #4 ( $\mu\text{g}/\text{m}^3$ )	TSP South #1 ( $\mu\text{g}/\text{m}^3$ )	TSP North #2 ( $\mu\text{g}/\text{m}^3$ )	TSP East #3 ( $\mu\text{g}/\text{m}^3$ )	LEAD Big River #4 ( $\mu\text{g}/\text{m}^3$ )	LEAD South #1 ( $\mu\text{g}/\text{m}^3$ )	LEAD North #2 ( $\mu\text{g}/\text{m}^3$ )	LEAD East #3 ( $\mu\text{g}/\text{m}^3$ )
7/2/12	54	41	36	INVALID	0.068	0.031	0.061	INVALID
7/3/12	71	66	53	57	0.045	0.026	0.030	0.031
7/5/12	71	92	58	89	0.050	0.110	0.049	0.048
7/6/12	47	40	32	37	0.034	0.042	0.013	0.019
7/9/12	44	38	32	33	0.011	0.031	0.000	0.009
7/10/12	40	37	33	34	0.012	0.038	0.008	0.009
7/11/12	44	37	32	34	0.013	0.013	0.000	0.007
7/12/12	36	25	23	25	0.020	0.008	0.000	0.000
7/13/12	28	16	14	39	0.020	0.006	0.000	0.025
7/16/12	20	25	20	17	0.011	0.011	0.050	0.012
7/17/12	43	54	30	39	0.035	0.040	0.049	0.042
7/18/12	64	73	37	41	0.056	0.077	0.011	0.037
7/19/12	76	94	32	42	0.083	0.191	0.000	0.069
7/20/12	53	62	28	33	0.023	0.252	0.006	0.014
7/23/12	45	34	34	40	0.028	0.012	0.035	0.041
7/24/12	58	60	36	46	0.048	0.062	0.016	0.028
7/25/12	39	53	41	56	0.014	0.043	0.090	0.073
7/26/12	26	43	25	53	0.024	0.087	0.032	0.082
7/27/12	32	43	28	29	0.011	0.024	0.007	0.048
7/30/12	88	83	49	55	0.082	0.254	0.034	0.059
7/31/12	69	45	36	35	0.057	0.086	0.050	0.018
<b>Monthly Average</b>	50	50	34	42	0.035	0.069	0.026	0.034
<b>June 2012</b>					0.031	0.089	0.054	0.026
<b>May 2012</b>					0.024	0.135	0.031	0.029
<b>Rolling 3-month Average</b>					0.03	0.10	0.04	0.03
					<b>3-month Average Lead NAAQS <math>\mu\text{g}/\text{m}^3</math> 0.15</b>			

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.



## Particulate Summary

Rivermines  
Park Hills, Missouri

2012

Date	PM <sub>10</sub> Big River #4 ( $\mu\text{g}/\text{m}^3$ )	PM <sub>10</sub> South #1 ( $\mu\text{g}/\text{m}^3$ )	PM <sub>10</sub> North #2 ( $\mu\text{g}/\text{m}^3$ )	PM <sub>10</sub> East #3 ( $\mu\text{g}/\text{m}^3$ )	PM <sub>10</sub> NAAQS ( $\mu\text{g}/\text{m}^3$ )
2-Jul	24	21	19	17	150
5-Jul	39	43	30	37	150
8-Jul	20	21	21	33	150
11-Jul	26	25	24	23	150
14-Jul	10	7	6	8	150
17-Jul	17	25	19	19	150
20-Jul	23	37	19	19	150
23-Jul	31	32	23	28	150
26-Jul	15	26	16	26	150
29-Jul	14	11	11	10	150
<b>Monthly Average</b>	22	25	19	22	

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.

*Particulate and Lead Analysis*



# TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P4557

Big River Site #4- Primary

Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. µg	T <sub>av</sub> C	P <sub>av</sub> mmHg	P <sub>i</sub> mmHg	Ratio P <sub>i</sub> /P <sub>av</sub>	Q <sub>s</sub> m <sup>3</sup> /min	Q <sub>std</sub> m <sup>3</sup> /min	Elapsed Time hr	Sample Volume V <sub>std</sub> m <sup>3</sup>	Mass Concentrations TSP µg/m <sup>3</sup>	Lead µg/m <sup>3</sup>
7/2/2012	8593425	0.0926	118	27	743.7	36.4	0.951	1.249	1.214	23.70	1727	54	0.088
7/3/2012	8593416	0.1209	77	29	742.8	36.7	0.951	1.253	1.207	23.49	1701	71	0.045
7/5/2012	8593406	0.1162	83	33	743.1	37.1	0.950	1.213	1.156	23.71	1644	71	0.050
7/6/2012	8593598	0.0808	58	31	743.4	36.9	0.950	1.256	1.204	23.69	1711	47	0.034
7/9/2012	8593588	0.0755	19	25	744.2	36.2	0.951	1.247	1.219	23.71	1733	44	0.011
7/10/2012	8593578	0.0681	21	27	744.0	36.4	0.951	1.249	1.216	23.65	1725	40	0.012
7/11/2012	8593569	0.0767	23	26	744.5	36.2	0.951	1.247	1.219	23.66	1730	44	0.013
7/12/2012	8593559	0.0620	35	27	744.3	36.4	0.951	1.249	1.215	23.68	1727	38	0.020
7/13/2012	8593550	0.0483	35	26	744.7	36.3	0.951	1.248	1.217	23.65	1727	28	0.020
7/16/2012	8593540	0.0350	19	29	743.8	36.6	0.951	1.252	1.210	23.72	1722	20	0.011
7/17/2012	8593531	0.0737	59	30	742.3	36.8	0.950	1.254	1.205	23.66	1710	43	0.035
7/18/2012	8593522	0.1086	95	32	742.4	37.0	0.950	1.258	1.200	23.66	1705	64	0.056
7/19/2012	8593513	0.1228	134	33	742.2	37.2	0.950	1.203	1.144	23.53	1615	76	0.083
7/20/2012	8593503	0.0905	39	27	743.9	36.4	0.951	1.249	1.214	23.62	1721	53	0.023
7/23/2012	8594893	0.0745	46	32	745.4	37.1	0.950	1.230	1.177	23.62	1688	45	0.028
7/24/2012	8594884	0.0601	75	34	743.1	37.3	0.950	1.158	1.100	23.66	1561	58	0.048
7/25/2012	8594876	0.0601	21	34	740.3	37.3	0.950	1.145	1.082	23.57	1531	39	0.014
7/26/2012	8594865	0.0450	41	28	739.9	36.6	0.951	1.251	1.204	23.59	1704	26	0.024
7/27/2012	8594857	0.0547	19	29	742.3	36.6	0.951	1.252	1.207	23.61	1710	32	0.011
7/30/2012	8594848	0.1492	139	29	741.4	36.6	0.951	1.252	1.206	23.54	1703	88	0.082
7/31/2012	8594838	0.1182	97	29	742.1	36.7	0.951	1.253	1.205	23.66	1711	69	0.057

Data Captured	TSP	Lead
Valid Samples:	21	21
Scheduled Samples:	21	21
Percent Data Captured:	100%	100%

Monthly Average:	50	0.035
Standard Deviation:	18	0.023
Maximum:	88	0.083
Minimum:	20	0.011

## NOTES

7/4/2012 - Holiday - No samples scheduled

## DEFINITIONS and CALCULATIONS

T<sub>av</sub> = average temperature in degrees Celsius

P<sub>av</sub> = average station pressure in millimeters of mercury

P<sub>i</sub> = (((Temp in Kelvin \* Temp Slope) + Temp Int.)) \* 1.868

P<sub>i</sub> = ((Temp in Kelvin \* 0.0664) + (-0.4213)) \* 1.868

P<sub>i</sub>/P<sub>av</sub> = pressure ratio of P<sub>i</sub> and P<sub>av</sub> = 1 - P/P<sub>av</sub>

Q<sub>s</sub> = look up table volumetric flow rate

Q<sub>std</sub> = total sample volumetric flow rate corrected to standard conditions

V<sub>std</sub> = total sample volume corrected to standard conditions

TSP = mass concentration in µg/std m<sup>3</sup>

Lead = mass concentration in µg/std m<sup>3</sup>



# TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P2940				Elvins Rivermines Site #1 by Office									
Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. µg	T <sub>av</sub> C	P <sub>av</sub> mmHg	P <sub>i</sub> mmHg	Ratio P <sub>i</sub> /P <sub>av</sub>	Q <sub>a</sub> m <sup>3</sup> /min	Q <sub>std</sub> m <sup>3</sup> /min	Elapsed Time hr	Sample Volume V <sub>std</sub> m <sup>3</sup>	Mass Concentrations TSP µg/m <sup>3</sup>	Lead µg/m <sup>3</sup>
7/2/2012	8593422	0.0710	53	27	743.7	36.4	0.951	1.255	1.220	23.76	1739	41	0.031
7/3/2012	8593413	0.1147	45	29	742.8	36.7	0.951	1.259	1.213	23.77	1730	66	0.028
7/5/2012	8593403	0.1528	182	33	743.1	37.1	0.950	1.217	1.159	23.83	1657	92	0.110
7/8/2012	8593585	0.0687	72	31	743.4	36.9	0.950	1.262	1.209	23.83	1729	40	0.042
7/9/2012	8593585	0.0863	54	25	744.2	36.2	0.951	1.252	1.224	23.77	1746	38	0.031
7/10/2012	8593575	0.0636	66	27	744.0	36.4	0.951	1.254	1.221	23.76	1741	37	0.036
7/11/2012	8593586	0.0641	23	26	744.5	36.2	0.951	1.253	1.224	23.69	1740	37	0.013
7/12/2012	8593558	0.0441	14	27	744.3	36.4	0.951	1.255	1.221	23.77	1741	25	0.008
7/13/2012	8593547	0.0286	10	26	744.7	36.3	0.951	1.254	1.223	23.82	1747	16	0.006
7/16/2012	8593537	0.0432	19	29	743.8	36.6	0.951	1.258	1.215	23.75	1732	25	0.011
7/17/2012	8593528	0.0626	69	30	742.3	36.8	0.950	1.260	1.210	23.74	1724	54	0.040
7/18/2012	8593519	0.1252	132	32	742.4	37.0	0.950	1.263	1.205	23.84	1724	73	0.077
7/19/2012	8593510	0.1523	311	33	742.2	37.2	0.950	1.206	1.147	23.66	1628	94	0.191
7/20/2012	8594900	0.1088	440	27	743.9	36.4	0.951	1.255	1.220	23.80	1742	62	0.252
7/23/2012	8594890	0.0571	20	32	745.4	37.1	0.950	1.235	1.181	23.76	1883	34	0.012
7/24/2012	8594881	0.0944	98	34	743.1	37.3	0.950	1.159	1.100	23.77	1569	60	0.062
7/25/2012	8594873	0.0816	67	34	740.3	37.3	0.950	1.145	1.082	23.80	1546	53	0.043
7/28/2012	8594862	0.0746	150	28	739.9	36.6	0.951	1.257	1.210	23.79	1727	43	0.087
7/27/2012	8594854	0.0742	42	29	742.3	36.6	0.951	1.258	1.213	23.78	1731	43	0.024
7/30/2012	8594845	0.1424	437	29	741.4	36.6	0.951	1.258	1.212	23.72	1724	83	0.254
7/31/2012	8594835	0.0777	147	29	742.1	36.7	0.951	1.259	1.211	23.72	1723	45	0.086

  

<b>Data Captured</b>	<b>TSP</b>	<b>Lead</b>
Valid Samples:	21	21
Scheduled Samples:	21	21
Percent Data Captured:	100%	100%

  

Monthly Average:	50	0.069
Standard Deviation:	21	0.075
Maximum:	94	0.254
Minimum:	16	0.006

  

**NOTES**

7/4/2012 - Holiday - No samples scheduled

  

**DEFINITIONS and CALCULATIONS**

T<sub>av</sub> = average temperature in degrees Celsius  
P<sub>av</sub> = average station pressure in millimeters of mercury  
P<sub>i</sub> = ((Temp in °Kelvin \* Temp Slope) + Temp Int.) \* 1.888  
P<sub>i</sub> = ((Temp in °Kelvin \* 0.0684) + (-0.4213)) \* 1.888  
P<sub>i</sub>/P<sub>av</sub> = pressure ratio of P<sub>i</sub> and P<sub>av</sub> = 1 - P/P<sub>av</sub>

Q<sub>a</sub> = look up table volumetric flow rate  
Q<sub>std</sub> = total sample volumetric flow rate corrected to standard conditions  
V<sub>std</sub> = total sample volume corrected to standard conditions  
TSP = mass concentration in µg/std m<sup>3</sup>  
Lead = mass concentration in µg/std m<sup>3</sup>



# TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P2941				Elvins Rivermines Site #2 Wood & Barton									
Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. µg	T <sub>av</sub> C	P <sub>av</sub> mmHg	P <sub>i</sub> mmHg	Ratio P <sub>i</sub> /P <sub>a</sub>	Q <sub>a</sub> m <sup>3</sup> /min	Q <sub>std</sub> m <sup>3</sup> /min	Elapsed Time hr	Sample Volume V <sub>std</sub> m <sup>3</sup>	Mass Concentrations TSP µg/m <sup>3</sup>	Lead µg/m <sup>3</sup>
7/2/2012	8593424	0.0614	106	27	743.7	36.4	0.951	1.238	1.204	23.89	1725	36	0.081
7/3/2012	8593415	0.0901	51	29	742.8	36.7	0.951	1.242	1.197	23.89	1715	53	0.030
7/5/2012	8593405	0.0653	81	33	743.1	37.1	0.950	1.205	1.148	23.86	1643	58	0.049
7/6/2012	8593567	0.0541	22	31	743.4	36.9	0.950	1.245	1.193	23.92	1712	32	0.013
7/9/2012	8593587	0.0556	< 10	25	744.2	36.2	0.951	1.236	1.208	23.91	1733	32	0.000
7/10/2012	8593577	0.0579	14	27	744.0	36.4	0.951	1.238	1.205	23.97	1733	33	0.008
7/11/2012	8593568	0.0551	< 10	26	744.5	36.2	0.951	1.236	1.208	23.73	1720	32	0.000
7/12/2012	8593558	0.0398	< 10	27	744.3	36.4	0.951	1.238	1.205	23.96	1732	23	0.000
7/13/2012	8593549	0.0247	< 10	26	744.7	36.3	0.951	1.238	1.207	23.89	1729	14	0.000
7/16/2012	8593539	0.0351	86	29	743.8	36.6	0.951	1.241	1.199	23.87	1718	20	0.050
7/17/2012	8593530	0.0518	84	30	742.3	36.8	0.950	1.243	1.194	23.89	1712	30	0.049
7/18/2012	8593521	0.0629	18	32	742.4	37.0	0.950	1.246	1.189	23.97	1710	37	0.011
7/19/2012	8593512	0.0509	< 10	33	742.2	37.2	0.950	1.196	1.137	23.56	1607	32	0.000
7/20/2012	8593502	0.0480	10	27	743.9	36.4	0.951	1.239	1.204	23.76	1716	28	0.008
7/23/2012	8594892	0.0580	59	32	745.4	37.1	0.950	1.221	1.168	23.80	1668	34	0.035
7/24/2012	8594883	0.0560	25	34	743.1	37.3	0.950	1.154	1.096	23.78	1563	36	0.016
7/25/2012	8594875	0.0633	138	34	740.3	37.3	0.950	1.142	1.079	23.67	1533	41	0.090
7/26/2012	8594864	0.0423	54	28	739.9	36.6	0.951	1.240	1.194	23.77	1703	25	0.032
7/27/2012	8594856	0.0483	13	29	742.3	36.6	0.951	1.241	1.197	23.78	1708	28	0.007
7/30/2012	8594847	0.0828	58	29	741.4	36.6	0.951	1.241	1.196	23.75	1704	49	0.034
7/31/2012	8594837	0.0618	86	29	742.1	36.7	0.951	1.242	1.195	23.82	1707	36	0.050

  

Data Captured	TSP	Lead
Valid Samples:	21	21
Scheduled Samples:	21	21
Percent Data Captured:	100%	100%

  

Monthly Average:	34	0.026
Standard Deviation:	10	0.025
Maximum:	58	0.090
Minimum:	14	0.000

  

**NOTES**

7/4/2012 - Holiday - No samples scheduled

  

**DEFINITIONS and CALCULATIONS**

T<sub>av</sub> = average temperature in degrees Celsius  
P<sub>av</sub> = average station pressure in millimeters of mercury  
P<sub>i</sub> = (((Temp in °Kelvin \* Temp Slope)+Temp Int.))\*1.868  
P<sub>i</sub> = (((Temp in °Kelvin \* 0.0684)+(-0.4213))\*1.868  
P<sub>i</sub>/P<sub>a</sub> = pressure ratio of P<sub>i</sub> and P<sub>av</sub> = 1 - P<sub>i</sub>/P<sub>av</sub>

Q<sub>a</sub> = look up table volumetric flow rate  
Q<sub>std</sub> = total sample volumetric flow rate corrected to standard conditions  
V<sub>std</sub> = total sample volume corrected to standard conditions  
TSP = mass concentration in µg/std m<sup>3</sup>  
Lead = mass concentration in µg/std m<sup>3</sup>



# TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P4475										Elvins Rivermines Site #3 WTP			
Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. µg	T <sub>av</sub> C	P <sub>av</sub> mmHg	P <sub>i</sub> mmHg	Ratio P <sub>i</sub> /P <sub>av</sub>	Q <sub>s</sub> m <sup>3</sup> /min	Q <sub>std</sub> m <sup>3</sup> /min	Elapsed Time hr	Sample Volume V <sub>std</sub> m <sup>3</sup>	Mass Concentrations TSP µg/m <sup>3</sup>	Lead µg/m <sup>3</sup>
7/2/2012	8593423	0.0224	15	27	743.7	38.4	0.951	1.235	1.201	7.24	522	INVALID	INVALID
7/3/2012	8593414	0.0975	52	29	742.8	36.7	0.951	1.239	1.194	23.78	1704	57	0.031
7/5/2012	8593404	0.1447	78	33	743.1	37.1	0.950	1.207	1.149	23.66	1632	89	0.048
7/8/2012	8593596	0.0621	32	31	743.4	36.9	0.950	1.242	1.191	23.68	1692	37	0.019
7/9/2012	8593588	0.0588	15	25	744.2	36.2	0.951	1.233	1.205	23.69	1713	33	0.009
7/10/2012	8593576	0.0589	15	27	744.0	36.4	0.951	1.235	1.202	23.70	1709	34	0.009
7/11/2012	8593567	0.0575	11	28	744.5	36.2	0.951	1.233	1.205	23.65	1710	34	0.007
7/12/2012	8593557	0.0420	< 10	27	744.3	36.4	0.951	1.235	1.202	23.68	1708	25	0.000
7/13/2012	8593548	0.0665	43	28	744.7	36.3	0.951	1.235	1.204	23.68	1710	39	0.025
7/16/2012	8593538	0.0296	21	29	743.8	36.6	0.951	1.239	1.197	23.65	1698	17	0.012
7/17/2012	8593529	0.0659	71	30	742.3	36.8	0.950	1.240	1.192	23.72	1696	39	0.042
7/18/2012	8593520	0.0689	62	32	742.4	37.0	0.950	1.244	1.187	23.65	1684	41	0.037
7/19/2012	8593511	0.0688	111	33	742.2	37.2	0.950	1.199	1.140	23.61	1614	42	0.069
7/20/2012	8593501	0.0563	24	27	743.9	36.4	0.951	1.236	1.201	23.72	1709	33	0.014
7/23/2012	8594891	0.0662	68	32	745.4	37.1	0.950	1.221	1.168	23.69	1660	40	0.041
7/24/2012	8594882	0.0719	45	34	743.1	37.3	0.950	1.161	1.103	23.73	1570	46	0.028
7/25/2012	8594874	0.0869	113	34	740.3	37.3	0.950	1.150	1.087	23.61	1540	56	0.073
7/28/2012	8594863	0.0897	139	28	739.9	36.6	0.951	1.238	1.191	23.66	1691	53	0.082
7/27/2012	8594855	0.0486	82	29	742.3	36.6	0.951	1.238	1.194	23.67	1696	29	0.048
7/30/2012	8594846	0.0934	100	29	741.4	36.6	0.951	1.238	1.193	23.67	1694	55	0.059
7/31/2012	8594836	0.0598	31	29	742.1	36.7	0.951	1.240	1.192	23.72	1697	35	0.018

  

Data Captured	TSP	Lead
Valid Samples:	20	20
Scheduled Samples:	21	21
Percent Data Captured:	95%	95%

  

Monthly Average:	42	0.034
Standard Deviation:	15	0.024
Maximum:	89	0.082
Minimum:	17	0.000

  

**NOTES**

7/2/2012 - INVALID - Mechanical Failure  
7/4/2012 - Holiday - No samples scheduled

  

**DEFINITIONS and CALCULATIONS**

T<sub>av</sub> = average temperature in degrees Celsius  
P<sub>av</sub> = average station pressure in millimeters of mercury  
P<sub>i</sub> = (((Temp in °Kelvin \* Temp Slope)) + Temp Int.) \* 1.888  
P<sub>i</sub> = ((Temp in °Kelvin \* 0.0884) + (-0.4213)) \* 1.888  
P<sub>i</sub>/P<sub>av</sub> = pressure ratio of P<sub>i</sub> and P<sub>av</sub> = 1 - P<sub>i</sub>/P<sub>av</sub>  
Q<sub>s</sub> = look up table volumetric flow rate  
Q<sub>std</sub> = total sample volumetric flow rate corrected to standard conditions  
V<sub>std</sub> = total sample volume corrected to standard conditions  
TSP = mass concentration in µg/std m<sup>3</sup>  
Lead = mass concentration in µg/std m<sup>3</sup>



# TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P6609										Big River Site #4 - QA			
Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. µg	T <sub>av</sub> C	P <sub>av</sub> mmHg	P <sub>f</sub> mmHg	Ratio P <sub>f</sub> /P <sub>av</sub>	Q <sub>s</sub> m <sup>3</sup> /min	Q <sub>std</sub> m <sup>3</sup> /min	Elapsed Time hr	Sample Volume V <sub>std</sub> m <sup>3</sup>	Mass Concentrations TSP µg/m <sup>3</sup> Lead µg/m <sup>3</sup>	
7/3/2012	8593426	0.1245	75	29	742.8	36.7	0.951	1.244	1.199	23.67	1703	73	0.044
7/5/2012	8593407	0.1160	77	33	743.1	37.1	0.950	1.207	1.149	23.63	1629	71	0.047
7/10/2012	8593589	0.0671	21	27	744.0	36.4	0.951	1.240	1.207	23.65	1713	39	0.012
7/12/2012	8593560	0.0822	41	27	744.3	36.4	0.951	1.240	1.207	23.62	1710	36	0.024
7/17/2012	8593541	0.0719	63	30	742.3	38.8	0.950	1.245	1.197	23.66	1699	42	0.037
7/19/2012	8593514	0.1207	123	33	742.2	37.2	0.950	1.197	1.138	23.43	1600	75	0.077
7/24/2012	8594894	0.0858	71	34	743.1	37.3	0.950	1.154	1.096	23.56	1549	55	0.046
7/26/2012	8594866	0.0463	37	28	739.9	36.8	0.951	1.243	1.196	23.68	1699	27	0.022
7/31/2012	8594839	0.1110	86	29	742.1	36.7	0.951	1.245	1.197	23.50	1688	66	0.051

  

Valid Samples:	9	9
Scheduled Samples:	9	9
Percent Data Captured:	100%	100%

  

Monthly Average:	54	0.040
Standard Deviation:	18	0.019
Maximum:	75	0.077
Minimum:	27	0.012

  

**NOTES**

  

**DEFINITIONS and CALCULATIONS**

T<sub>av</sub> = average temperature in degrees Celcius

P<sub>av</sub> = average station pressure in millimeters of mercury

P<sub>f</sub> = (((Temp in °Kelvin \* Temp Slope)) + Temp Int.)\*1.868

P<sub>f</sub> = ((Temp in °Kelvin \* 0.0664) + (-0.4213))\*1.868

P<sub>f</sub>/P<sub>av</sub> = pressure ratio of P<sub>f</sub> and P<sub>av</sub> = 1 - Pf/P<sub>av</sub>

Q<sub>s</sub> = look up table volumetric flow rate

Q<sub>std</sub> = total sample volumetric flow rate corrected to standard conditions

V<sub>std</sub> = total sample volume corrected to standard conditions

TSP = mass concentration in µg/std m<sup>3</sup>

Lead = mass concentration in µg/std m<sup>3</sup>











*Lab Results (Lead and Cadmium)*



120 East Davis Street  
P.O. Box 30  
Fayette, MO 65248-0030

Phone: (660) 248-1911  
Fax: (660) 248-1921  
http://www.inovatia.com

### ANALYSIS REPORT

**Client Information:**

Barr Engineering Company  
7390 Ohms Lane  
Edina, MN 55439-2330

**Chain of Custody No.:** 12-0686**Date Received:** 07/18/12**Analysis Method:** 40 CFR §50  
Appendix G**Location****Elvins River  
Mines**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123569	8593422	07/02/12	#1 South - Office	53	< 10	07/31/12 - DS
123570	8593424	07/02/12	#2 North - W&B	106	< 10	07/31/12 - DS
123571	8593423	07/02/12	#3 East - WTP	15	< 10	07/31/12 - DS
123572	8593413	07/03/12	#1 South - Office	45	< 10	07/31/12 - DS
123573	8593415	07/03/12	#2 North - W&B	51	< 10	07/31/12 - DS
123574	8593414	07/03/12	#3 East - WTP	52	< 10	07/31/12 - DS
123575	8593403	07/05/12	#1 South - Office	182	< 10	07/31/12 - DS
123576	8593405	07/05/12	#2 North - W&B	81	< 10	07/31/12 - DS
123577	8593404	07/05/12	#3 East - WTP	78	< 10	07/31/12 - DS
123578	8593595	07/06/12	#1 South - Office	72	< 10	07/31/12 - DS
123579	8593597	07/06/12	#2 North - W&B	22	< 10	07/31/12 - DS
123580	8593596	07/06/12	#3 East - WTP	32	< 10	07/31/12 - DS

Digitally signed by Jennifer  
Vandelicht  
DN: cn=Jennifer Vandelicht,  
o=Inovatia Laboratories, LLC,  
ou=Quality Assurance,  
email=jvandelicht@inovaita.  
com, c=US  
Date: 2012.08.02 14:39:49  
-05'00'

Submitted by: \_\_\_\_\_

8/2/12

Date

This report has been produced for the exclusive and confidential use of our clients. Reference to the analyses, the results, or the corporation in any news releases, advertising, or other public announcement is prohibited without obtaining prior written consent.



120 East Davis Street  
 P.O. Box 30  
 Fayette, MO 65248-0030

Phone: (660) 248-1911  
 Fax: (660) 248-1921  
 http://www.inovatia.com

**ANALYSIS REPORT**

**Client Information:**

Barr Engineering Company  
 7390 Ohms Lane  
 Edina, MN 55439-2330

**Chain of Custody No.:** 12-0717  
**Date Received:** 07/27/12  
**Analysis Method:** 40 CFR §50  
 Appendix G

**Location**

**Elvins River  
 Mines**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123679	8593585	07/09/12	#1 South - Office	54	< 10	08/01/12 - DS
123680	8593587	07/09/12	#2 North - W&B	< 10	< 10	08/01/12 - DS
123681	8593586	07/09/12	#3 East - WTP	15	< 10	08/01/12 - DS
123682	8593575	07/10/12	#1 South - Office	66	< 10	08/01/12 - DS
123683	8593577	07/10/12	#2 North - W&B	14	< 10	08/01/12 - DS
123684	8593576	07/10/12	#3 East - WTP	15	< 10	08/01/12 - DS
123685	8593566	07/11/12	#1 South - Office	23	< 10	08/01/12 - DS
123686	8593568	07/11/12	#2 North - W&B	< 10	< 10	08/01/12 - DS
123687	8593567	07/11/12	#3 East - WTP	11	< 10	08/01/12 - DS
123688	8593556	07/12/12	#1 South - Office	14	< 10	08/01/12 - DS
123689	8593558	07/12/12	#2 North - W&B	< 10	< 10	08/01/12 - DS
123690	8593557	07/12/12	#3 East - WTP	< 10	< 10	08/01/12 - DS
123691	8593547	07/13/12	#1 South - Office	10	< 10	08/01/12 - DS
123692	8593549	07/13/12	#2 North - W&B	< 10	< 10	08/01/12 - DS
123693	8593548	07/13/12	#3 East - WTP	43	< 10	08/01/12 - DS

Digitally signed by Jennifer Vandelicht  
 DN: cn=Jennifer Vandelicht,  
 o=Inovatia Laboratories,  
 LLC, ou=Quality Assurance,  
 email=jvandelicht@inovaita.com, c=US  
 Date: 2012.08.02 16:31:13 -05'00'

Submitted by: \_\_\_\_\_

8/2/12

\_\_\_\_\_  
 Date

This report has been produced for the exclusive and confidential use of our clients. Reference to the analyses, the results, or the corporation in any news releases, advertising, or other public announcement is prohibited without obtaining prior written consent.



120 East Davis Street  
 P.O. Box 30  
 Fayette, MO 65248-0030

Phone: (660) 248-1911  
 Fax: (660) 248-1921  
 http://www.inovatia.com

**ANALYSIS REPORT**

**Client Information:**

Barr Engineering Company  
 7390 Ohms Lane  
 Edina, MN 55439-2330

**Chain of Custody No.:** 12-0745

**Date Received:** 08/03/12

**Analysis Method:** 40 CFR §50  
 Appendix G

**Location**

**Elvins River  
 Mines**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123799	8593537	07/16/12	#1 South - Office	19	< 10	08/07/12 - DS
123800	8593539	07/16/12	#2 North - W&B	86	< 10	08/07/12 - DS
123801	8593538	07/16/12	#3 East - WTP	21	< 10	08/07/12 - DS
123802	8593528	07/17/12	#1 South - Office	69	< 10	08/07/12 - DS
123803	8593530	07/17/12	#2 North - W&B	84	< 10	08/07/12 - DS
123804	8593529	07/17/12	#3 East - WTP	71	< 10	08/07/12 - DS
123805	8593519	07/18/12	#1 South - Office	132	< 10	08/07/12 - DS
123806	8593521	07/18/12	#2 North - W&B	18	< 10	08/07/12 - DS
123807	8593520	07/18/12	#3 East - WTP	62	< 10	08/07/12 - DS
123808	8593510	07/19/12	#1 South - Office	311	< 10	08/07/12 - DS
123809	8593512	07/19/12	#2 North - W&B	< 10	< 10	08/07/12 - DS
123810	8593511	07/19/12	#3 East - WTP	111	< 10	08/07/12 - DS
123811	8594900	07/20/12	#1 South - Office	440	< 10	08/07/12 - DS
123812	8593502	07/20/12	#2 North - W&B	10	< 10	08/07/12 - DS
123813	8593501	07/20/12	#3 East - WTP	24	< 10	08/07/12 - DS

Digitally signed by Jennifer Vandelicht  
 DN: cn=Jennifer Vandelicht,  
 o=Inovatia Laboratories, LLC,  
 ou=Quality Assurance,  
 email=jvandelicht@inovaita.com,  
 c=US  
 Date: 2012.08.08 16:19:05 -05'00'

Submitted by: \_\_\_\_\_

8/8/12

Date

This report has been produced for the exclusive and confidential use of our clients. Reference to the analyses, the results, or the corporation in any news releases, advertising, or other public announcement is prohibited without obtaining prior written consent.



120 East Davis Street  
 P.O. Box 30  
 Fayette, MO 65248-0030

Phone: (660) 248-1911  
 Fax: (660) 248-1921  
 http://www.inovatia.com

**ANALYSIS REPORT**

**Client Information:**

Barr Engineering Company  
 7390 Ohms Lane  
 Edina, MN 55439-2330

**Chain of Custody No.:** 12-0775

**Date Received:** 08/10/12

**Analysis Method:** 40 CFR §50  
 Appendix G

**Location**

**Elvins River  
 Mines**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123949	8594890	07/23/12	#1 South - Office	20	< 10	08/14/12 - DS
123950	8594892	07/23/12	#2 North - W&B	59	< 10	08/14/12 - DS
123951	8594891	07/23/12	#3 East - WTP	68	< 10	08/14/12 - DS
123952	8594881	07/24/12	#1 South - Office	98	< 10	08/14/12 - DS
123953	8594883	07/24/12	#2 North - W&B	25	< 10	08/14/12 - DS
123954	8594882	07/24/12	#3 East - WTP	45	< 10	08/14/12 - DS
123955	8594873	07/25/12	#1 South - Office	67	< 10	08/14/12 - DS
123956	8594875	07/25/12	#2 North - W&B	138	< 10	08/14/12 - DS
123957	8594874	07/25/12	#3 East - WTP	113	< 10	08/14/12 - DS
123958	8594862	07/26/12	#1 South - Office	150	< 10	08/14/12 - DS
123959	8594864	07/26/12	#2 North - W&B	54	< 10	08/21/12 - DS
123960	8594863	07/26/12	#3 East - WTP	139	< 10	08/21/12 - DS
123961	8594854	07/27/12	#1 South - Office	42	< 10	08/21/12 - DS
123962	8594856	07/27/12	#2 North - W&B	13	< 10	08/21/12 - DS
123963	8594855	07/27/12	#3 East - WTP	82	< 10	08/21/12 - DS
123964	8594845	07/30/12	#1 South - Office	437	< 10	08/21/12 - DS
123965	8594847	07/30/12	#2 North - W&B	58	< 10	08/21/12 - DS
123966	8594846	07/30/12	#3 East - WTP	100	< 10	08/21/12 - DS
123967	8594835	07/31/12	#1 South - Office	147	< 10	08/21/12 - DS
123968	8594837	07/31/12	#2 North - W&B	86	< 10	08/21/12 - DS
123969	8594836	07/31/12	#3 East - WTP	31	< 10	08/14/12 - DS

*Janice D. Brubaker*  
INOVATIA LABORATORIES, LLC  
 120 East Davis Street  
 P.O. Box 30  
 Fayette, MO 65248-0030  
 Phone: (660) 248-1911  
 Fax: (660) 248-1921  
 http://www.inovatia.com

Submitted by: \_\_\_\_\_

8/22/12  
 \_\_\_\_\_

Date

This report has been produced for the exclusive and confidential use of our clients. Reference to the analyses, the results, or the corporation in any news releases, advertising, or other public announcement is prohibited without obtaining prior written consent.



120 East Davis Street  
 P.O. Box 30  
 Fayette, MO 65248-0030

Phone: (660) 248-1911  
 Fax: (660) 248-1921  
 http://www.inovatia.com

**ANALYSIS REPORT**

**Client Information:**

Barr Engineering Company  
 7390 Ohms Lane  
 Edina, MN 55439-2330

**Chain of Custody No.:** 12-0686  
**Date Received:** 07/18/12  
**Analysis Method:** 40 CFR §50  
 Appendix G  
**Location** **Big River**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123563	8593425	07/02/12	#4 Primary	118	< 10	07/31/12 - DS
123564	8593416	07/03/12	#4 Primary	77	< 10	07/31/12 - DS
123565	8593426	07/03/12	#4 QA	75	< 10	07/31/12 - DS
123566	8593406	07/05/12	#4 Primary	83	< 10	07/31/12 - DS
123567	8593407	07/05/12	#4 QA	77	< 10	07/31/12 - DS
123568	8593598	07/06/12	#4 Primary	58	< 10	07/31/12 - DS

*Jerry Waggoner*  
Digitally signed by J.B. Waggoner  
 DN: cn=J.B. Waggoner, o=Inovatia  
 Laboratories, LLC, ou=Managing  
 Partner, email=jwaggoner@inovatia.  
 com, c=US  
 Date: 2012.08.02 14:40:21 -0500

Submitted by: \_\_\_\_\_

8/2/12  
 \_\_\_\_\_  
 Date

This report has been produced for the exclusive and confidential use of our clients. Reference to the analyses, the results, or the corporation in any news releases, advertising, or other public announcement is prohibited without obtaining prior written consent.



120 East Davis Street  
 P.O. Box 30  
 Fayette, MO 65248-0030

Phone: (660) 248-1911  
 Fax: (660) 248-1921  
 http://www.inovatia.com

**ANALYSIS REPORT**

**Client Information:**

Barr Engineering Company  
 7390 Ohms Lane  
 Edina, MN 55439-2330

**Chain of Custody No.:** 12-0717  
**Date Received:** 07/27/12  
**Analysis Method:** 40 CFR §50  
 Appendix G  
**Location** **Big River**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123672	8593588	07/09/12	#4 Primary	19	< 10	08/01/12 - DS
123673	8593578	07/10/12	#4 Primary	21	< 10	08/01/12 - DS
123674	8593589	07/10/12	#4 QA	21	< 10	08/01/12 - DS
123675	8593569	07/11/12	#4 Primary	23	< 10	08/01/12 - DS
123676	8593559	07/12/12	#4 Primary	35	< 10	08/01/12 - DS
123677	8593560	07/12/12	#4 QA	41	< 10	08/01/12 - DS
123678	8593550	07/13/12	#4 Primary	35	< 10	08/01/12 - DS

Digitally signed by Jennifer Vandelicht  
 DN: cn=Jennifer Vandelicht,  
 o=Inovatia Laboratories, LLC,  
 ou=Quality Assurance,  
 email=jvandelicht@inovaita.com, c=US  
 Date: 2012.08.02 16:31:44 -05'00'

Submitted by: \_\_\_\_\_

8/2/12

Date

This report has been produced for the exclusive and confidential use of our clients. Reference to the analyses, the results, or the corporation in any news releases, advertising, or other public announcement is prohibited without obtaining prior written consent.



120 East Davis Street  
 P.O. Box 30  
 Fayette, MO 65248-0030

Phone: (660) 248-1911  
 Fax: (660) 248-1921  
 http://www.inovatia.com

**ANALYSIS REPORT**

**Client Information:**

Barr Engineering Company  
 7390 Ohms Lane  
 Edina, MN 55439-2330

**Chain of Custody No.:** 12-0745

**Date Received:** 08/03/12

**Analysis Method:** 40 CFR §50  
 Appendix G

**Location**

**Big River**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123792	8593540	07/16/12	#4 Primary	19	< 10	08/07/12 - DS
123793	8593531	07/17/12	#4 Primary	59	< 10	08/07/12 - DS
123794	8593541	07/17/12	#4 QA	63	< 10	08/07/12 - DS
123795	8593522	07/18/12	#4 Primary	95	< 10	08/07/12 - DS
123796	8593513	07/19/12	#4 Primary	134	< 10	08/07/12 - DS
123797	8593514	07/19/12	#4 QA	123	< 10	08/07/12 - DS
123798	8593503	07/20/12	#4 Primary	39	< 10	08/07/12 - DS

Submitted by: \_\_\_\_\_

Digitally signed by Jennifer  
 Vandelicht  
 DN: cn=Jennifer Vandelicht,  
 o=Inovatia Laboratories, LLC,  
 ou=Quality Assurance,  
 email=jvandelicht@inovaita.  
 com, c=US  
 Date: 2012.08.08 16:19:21  
 -05'00'

8/8/12

Date

This report has been produced for the exclusive and confidential use of our clients. Reference to the analyses, the results, or the corporation in any news releases, advertising, or other public announcement is prohibited without obtaining prior written consent.



120 East Davis Street  
P.O. Box 30  
Fayette, MO 65248-0030

Phone: (660) 248-1911  
Fax: (660) 248-1921  
<http://www.inovatia.com>

### ANALYSIS REPORT

**Client Information:**

Barr Engineering Company  
7390 Ohms Lane  
Edina, MN 55439-2330

Chain of Custody No.: 12-0775  
Date Received: 08/10/12  
Analysis Method: 40 CFR §50  
Appendix G  
**Location** Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123939	8594893	07/23/12	#4 Primary	46	< 10	08/21/12 - DS
123940	8594884	07/24/12	#4 Primary	75	< 10	08/21/12 - DS
123941	8594894	07/24/12	#4 QA	71	< 10	08/21/12 - DS
123942	8594876	07/25/12	#4 Primary	21	< 10	08/21/12 - DS
123943	8594865	07/26/12	#4 Primary	41	< 10	08/21/12 - DS
123944	8594866	07/26/12	#4 QA	37	< 10	08/21/12 - DS
123945	8594857	07/27/12	#4 Primary	19	< 10	08/21/12 - DS
123946	8594848	07/30/12	#4 Primary	139	< 10	08/21/12 - DS
123947	8594838	07/31/12	#4 Primary	97	< 10	08/21/12 - DS
123948	8594839	07/31/12	#4 QA	86	< 10	08/21/12 - DS

Submitted by: \_\_\_\_\_

  
Digitally signed by Jennifer  
Vandelicht  
DN: cn=Jennifer Vandelicht,  
o=Inovatia Laboratories, LLC,  
ou=Quality Assurance,  
email=jvandelicht@inovatia.com,  
c=US  
Date: 2012.08.22 09:52:04 -05'00'

8/22/12

Date

This report has been produced for the exclusive and confidential use of our clients. Reference to the analyses, the results, or the corporation in any news releases, advertising, or other public announcement is prohibited without obtaining prior written consent.

*Meteorological Data*

# Meteorological Report

## The Doe Run Company

### Wind Speed

Site Name: Rivermines

Average Interval: 01 Hour

Units: mph

Sampling Frequency: 01 Second

2012 Day	Hour																								24 Hour Avg	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max	Avg
1-Jul	0.2	0.7	1.0	0.2	0.9	0.3	0.5	1.4	1.9	3.5	3.3	3.5	3.1	3.2	3.8	4.8	5.9	5.4	3.7	2.4	1.5	2.4	1.7	0.9	5.9	2.3
2-Jul	0.2	0.0	0.2	0.3	0.4	0.3	0.3	1.1	2.2	4.9	4.8	3.5	8.2	6.4	2.2	1.6	2.0	1.4	0.2	0.7	1.5	0.9	1.6	0.7	8.2	1.9
3-Jul	1.2	0.6	0.7	1.0	1.4	0.4	0.2	0.7	1.6	2.6	3.8	3.3	3.6	4.2	9.0	8.2	6.0	6.4	7.1	5.5	5.0	3.6	3.2	3.3	9.0	3.4
4-Jul	1.0	0.1	0.0	0.4	0.7	0.4	0.8	1.4	2.5	2.7	3.8	3.8	3.9	4.0	3.0	2.4	2.7	2.1	0.4	0.8	2.2	4.3	1.0	0.3	4.3	1.9
5-Jul	0.1	0.0	0.0	0.0	0.0	0.0	0.8	1.6	2.7	6.0	6.1	4.5	2.9	4.0	3.2	2.9	3.9	3.9	3.0	0.6	2.2	0.5	0.1	0.0	6.1	2.1
6-Jul	0.3	0.0	0.3	0.4	0.1	0.1	0.5	0.5	1.3	2.3	2.8	3.0	4.8	6.7	4.1	2.4	4.0	2.7	1.0	0.7	1.3	0.1	0.0	0.1	6.7	1.7
7-Jul	0.9	0.4	0.3	0.9	0.2	0.0	0.1	0.8	0.9	2.0	2.6	3.6	3.4	5.2	4.8	4.8	4.1	7.5	4.4	4.7	1.6	0.7	0.9	1.5	7.5	2.3
8-Jul	1.1	1.7	1.1	1.5	0.5	1.0	0.9	1.9	1.1	1.6	1.4	1.2	2.2	0.6	2.3	5.5	2.8	2.2	4.7	2.1	2.6	1.5	2.4	1.5	5.5	1.9
9-Jul	1.6	1.3	0.1	0.4	0.5	0.1	0.9	1.7	3.0	2.3	3.9	3.5	3.7	3.5	4.0	4.4	4.2	4.9	2.4	0.2	0.3	0.1	0.6	0.3	4.9	2.0
10-Jul	0.8	0.2	0.2	0.2	0.1	0.1	0.1	2.3	3.9	4.7	5.2	5.0	5.7	5.6	5.3	5.5	5.4	4.7	3.3	0.6	0.2	0.2	0.3	0.4	5.7	2.5
11-Jul	0.2	0.1	0.2	0.5	0.3	0.2	0.2	2.3	2.4	2.7	3.4	4.3	5.0	5.7	5.3	4.8	3.4	3.3	0.1	0.5	0.3	0.1	0.2	0.8	5.7	1.9
12-Jul	0.8	0.5	0.2	0.1	0.1	0.6	0.4	0.4	2.3	3.3	4.9	4.6	5.2	6.0	6.1	5.4	5.3	5.9	4.3	1.3	0.1	0.0	0.2	0.0	6.1	2.4
13-Jul	0.1	0.3	0.1	0.1	0.0	0.0	0.8	2.6	1.7	2.0	2.5	3.4	3.6	3.9	4.8	4.8	2.8	3.3	3.4	0.4	0.5	1.8	2.7	1.1	4.8	1.9
14-Jul	0.6	0.2	0.5	0.2	0.3	0.0	0.3	2.8	3.6	4.5	5.1	4.1	3.0	3.0	2.0	5.6	5.0	4.6	3.2	2.4	0.4	0.5	2.7	0.4	5.6	2.3
15-Jul	1.3	1.2	0.6	0.9	0.8	0.7	0.5	0.8	1.1	2.8	3.4	5.4	4.6	6.0	4.9	5.3	5.0	6.1	6.0	4.4	4.4	4.9	4.8	1.3	6.1	3.2
16-Jul	1.2	1.3	0.7	1.0	1.9	1.2	2.4	5.4	4.5	3.6	5.7	5.4	3.3	4.5	5.3	4.3	5.0	5.3	3.0	3.5	3.4	3.1	3.2	2.5	5.7	3.4
17-Jul	2.0	2.2	1.9	2.2	0.7	0.1	0.6	1.7	2.1	2.8	3.1	3.3	2.6	6.9	6.5	5.3	5.8	5.5	3.9	4.5	4.9	3.3	1.5	1.3	6.9	3.1
18-Jul	0.7	0.5	0.2	0.4	0.4	0.2	0.6	1.4	2.4	3.2	3.3	3.3	4.4	3.7	3.7	3.2	6.8	6.7	5.0	4.3	6.1	2.5	4.1	5.1	6.8	3.0
19-Jul	3.1	1.9	2.0	1.2	1.9	1.5	1.3	2.0	3.0	4.2	5.3	5.0	4.2	4.1	4.1	3.3	4.1	2.0	1.1	0.3	0.2	2.1	1.0	0.2	5.3	2.5
20-Jul	0.4	0.2	0.4	0.3	0.4	2.7	4.6	4.6	5.2	6.7	6.5	6.6	7.3	8.4	8.8	8.1	7.5	6.8	5.3	4.0	2.2	0.4	0.9	0.1	8.8	4.1
21-Jul	0.1	0.4	0.3	0.9	0.2	0.5	1.1	3.5	4.4	5.1	4.5	5.9	5.3	4.9	4.9	4.7	4.4	3.8	2.5	0.5	0.1	0.4	0.2	0.3	5.9	2.5
22-Jul	0.2	0.4	0.5	0.4	0.4	0.5	0.5	0.8	1.2	3.6	3.4	3.1	3.6	3.8	5.8	5.3	5.5	4.8	4.6	3.8	3.9	4.9	5.2	4.0	5.8	2.9
23-Jul	3.0	1.4	3.0	2.5	0.9	0.5	3.3	3.7	4.2	3.7	3.1	4.4	4.6	4.6	4.5	5.3	4.8	5.9	5.9	4.8	5.6	6.6	5.2	3.5	6.6	4.0
24-Jul	3.5	2.8	2.9	3.7	3.2	2.5	3.1	3.6	3.1	4.2	3.2	3.7	2.6	3.2	3.5	2.6	3.7	4.0	2.8	4.0	5.9	6.8	5.5	4.7	6.8	3.7
25-Jul	2.3	3.0	2.6	3.4	2.7	3.0	3.4	3.1	3.0	2.8	5.7	6.8	7.3	8.1	7.4	8.4	8.1	6.9	5.8	7.0	9.4	9.1	9.7	8.2	9.7	5.7
26-Jul	5.7	5.3	5.6	5.4	4.4	2.0	1.3	1.7	2.8	2.2	3.2	3.5	2.1	2.6	5.7	5.2	3.2	0.4	1.9	2.4	1.9	1.2	1.2	0.2	5.7	3.0
27-Jul	1.8	2.2	2.1	1.4	0.1	0.5	1.4	2.1	2.3	2.7	3.5	4.1	4.9	3.9	4.3	4.7	5.6	5.5	6.2	1.2	0.0	0.1	0.1	0.3	6.2	2.5
28-Jul	0.3	0.3	0.3	0.1	0.3	0.2	0.1	0.8	2.5	3.7	4.4	6.1	5.5	6.1	5.8	5.4	6.5	5.7	3.1	0.5	0.6	0.1	0.0	0.7	6.5	2.5
29-Jul	0.1	0.2	0.4	0.4	0.5	0.6	0.5	1.8	3.6	0.8	2.9	4.6	4.3	6.7	6.8	7.0	6.4	6.5	5.0	3.6	2.1	2.1	2.3	3.3	7.0	3.0
30-Jul	3.7	4.6	6.2	7.2	4.7	3.0	3.4	2.9	2.1	5.4	5.2	6.2	6.3	6.1	4.7	2.7	3.3	1.7	2.0	0.4	1.2	0.5	0.4	0.1	7.2	3.5
31-Jul	0.5	0.7	0.3	0.1	0.6	0.0	0.2	0.3	2.2	3.0	4.0	3.1	2.7	2.9	2.9	3.3	2.2	2.2	2.5	1.9	1.2	0.6	2.3	1.9	4.0	1.7
																								Maximum Hour/Monthly Average	9.7	2.7
																								Total Hours in Month	744	
																								Valid Hours/Percent Data Captured	744	100.0%

# Meteorological Report

## The Doe Run Company

### Wind Direction

Site Name: Rivermines

Average Interval: 01 Hour

Units: Degrees

Sampling Frequency: 01 Second

2012	Hour																								24 Hour Avg
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Jul	208	89	174	197	218	203	280	280	269	307	288	310	272	307	262	5	106	108	149	83	85	230	183	189	198
2-Jul	189	217	176	193	217	185	237	273	283	8	104	97	151	232	231	188	284	228	214	207	209	10	27	197	181
3-Jul	211	308	205	227	234	201	271	257	259	274	279	281	287	233	171	164	162	171	187	190	197	190	201	223	224
4-Jul	240	208	200	199	209	214	250	288	275	272	302	321	282	252	226	255	261	230	120	140	160	192	227	209	230
5-Jul	194	118	198	193	192	189	246	257	298	328	346	21	22	359	302	68	18	49	85	58	138	136	214	226	177
6-Jul	200	198	187	196	194	222	239	270	286	39	356	20	40	165	187	201	256	234	263	229	208	208	201	200	200
7-Jul	191	220	210	195	192	189	267	257	25	27	72	67	61	103	139	207	231	230	236	351	358	239	190	185	185
8-Jul	223	219	228	238	199	213	228	212	218	353	302	290	355	32	85	185	313	9	66	90	188	251	38	202	197
9-Jul	253	356	219	240	178	195	198	344	353	14	12	16	16	60	5	25	22	18	27	46	201	200	198	184	141
10-Jul	168	192	184	187	204	229	214	26	57	43	80	64	61	47	63	60	68	65	73	78	201	196	200	184	123
11-Jul	189	200	196	185	192	194	228	15	1	8	87	74	54	39	59	66	130	142	228	210	202	353	164	181	141
12-Jul	250	183	186	185	183	198	229	314	3	46	54	66	64	64	76	66	85	134	133	143	165	235	192	195	144
13-Jul	194	184	187	189	196	187	264	194	250	42	103	75	60	98	119	124	104	125	167	187	283	260	148	219	185
14-Jul	256	206	184	210	229	191	233	212	212	177	175	196	227	224	143	173	180	175	172	173	180	145	181	209	194
15-Jul	128	209	183	174	321	199	323	300	354	41	121	155	165	188	181	193	170	184	176	171	184	190	192	226	197
16-Jul	179	177	177	174	199	199	213	221	225	222	184	189	189	207	214	219	206	224	210	226	217	215	214	210	204
17-Jul	214	210	221	229	212	209	249	252	272	290	275	252	256	192	160	163	152	159	151	157	169	180	215	241	212
18-Jul	226	151	118	191	180	216	254	280	278	289	300	264	289	242	272	263	109	151	147	112	171	203	147	175	209
19-Jul	193	222	229	206	200	247	256	251	260	291	299	301	286	281	307	286	302	280	259	236	217	49	281	209	248
20-Jul	214	217	199	197	249	345	15	8	12	358	11	18	8	5	9	19	9	17	11	22	18	28	26	33	85
21-Jul	191	192	189	178	181	191	75	68	58	57	72	32	46	52	63	43	45	46	37	72	117	193	194	186	107
22-Jul	187	186	184	191	193	201	266	12	105	161	134	103	133	89	146	137	160	157	165	166	165	185	192	203	159
23-Jul	222	213	219	212	202	199	220	243	237	245	239	220	215	204	196	214	224	211	206	199	193	207	216	216	215
24-Jul	213	215	226	233	238	240	248	255	273	300	306	318	284	216	212	240	223	223	235	203	199	197	205	210	238
25-Jul	213	217	228	236	237	239	245	252	269	267	222	208	220	209	222	217	219	219	216	198	197	197	198	203	223
26-Jul	215	219	222	232	237	261	259	281	323	1	220	132	214	277	300	147	207	237	161	205	188	194	213	214	215
27-Jul	246	237	225	238	195	186	241	249	249	253	256	253	245	263	268	231	290	298	328	356	205	197	211	181	246
28-Jul	191	193	185	187	182	187	219	329	8	356	336	339	5	4	20	12	13	29	23	36	94	200	194	194	147
29-Jul	204	184	203	215	326	221	184	65	65	193	168	150	138	169	167	195	176	170	160	156	149	145	148	152	171
30-Jul	180	178	191	193	184	169	177	208	263	327	351	349	13	15	16	36	20	9	14	3	9	48	193	224	139
31-Jul	195	206	204	194	189	234	226	328	12	359	13	351	44	13	332	325	341	349	155	166	165	308	234	236	216
																								Total Hours in Month	744
																								Valid Hours	744
																								Percent Data Captured	100.0%



# Meteorological Report

## The Doe Run Company

ΣΘ

Site Name: Rivermiles

Average Interval: 01 Hour

Units: Degrees

2012	Hour																								24 Hour Avg
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Jul	6.4	9.6	16.1	1.7	16.6	16.1	23.0	36.2	44.9	40.4	50.3	46.7	54.4	53.5	43.3	49.8	31.0	31.9	41.3	38.2	26.3	35.1	42.9	8.0	32
2-Jul	3.8	0.4	6.4	6.4	12.1	4.6	12.3	38.8	42.9	29.6	28.8	36.0	29.8	36.5	33.2	42.0	41.5	32.8	6.8	8.5	18.0	15.2	34.8	25.6	23
3-Jul	25.8	9.9	16.9	18.5	15.8	14.6	11.0	28.2	39.7	51.1	48.5	46.4	49.2	43.6	24.2	27.9	29.7	24.7	22.4	19.0	18.5	20.1	19.0	21.3	27
4-Jul	13.9	7.8	1.7	5.3	10.0	12.7	16.7	40.5	51.0	43.7	49.5	52.9	60.3	58.7	49.7	52.2	45.9	27.6	9.6	7.8	19.2	19.0	18.4	6.0	28
5-Jul	1.1	1.7	0.4	0.8	0.2	0.5	18.7	33.8	43.4	29.7	27.5	45.5	66.7	40.9	50.9	50.9	42.4	27.9	32.6	17.9	21.7	6.3	1.1	4.9	24
6-Jul	2.2	0.6	2.8	4.5	1.4	4.6	11.7	24.3	32.0	43.8	42.5	25.0	31.2	22.7	26.6	40.2	36.9	27.0	25.6	11.7	9.4	1.8	0.6	1.9	18
7-Jul	13.4	8.7	8.0	35.5	1.8	0.6	9.9	32.6	36.8	36.4	52.9	49.6	47.8	37.1	44.9	37.9	35.9	44.8	37.9	60.8	42.2	21.5	14.1	19.7	30
8-Jul	47.0	27.9	19.0	41.5	11.7	16.3	23.8	24.5	27.5	43.9	52.7	34.2	35.7	41.9	43.9	42.5	37.8	28.5	31.2	42.8	30.7	17.6	27.6	19.0	32
9-Jul	16.8	37.6	2.4	16.6	7.9	2.3	19.1	31.5	30.2	54.0	31.6	36.9	27.6	40.3	22.3	32.0	26.3	26.0	23.0	7.1	1.5	0.3	2.0	2.8	21
10-Jul	11.0	1.3	0.8	0.8	2.2	1.0	3.2	26.1	31.7	37.2	35.7	35.9	36.0	36.5	45.9	43.4	32.4	39.6	29.4	16.8	0.8	1.5	4.7	5.0	20
11-Jul	2.7	1.2	4.7	4.7	8.9	5.7	8.9	22.0	31.0	42.9	53.8	42.4	37.7	37.7	43.7	37.7	33.0	26.8	8.8	18.5	2.8	6.0	7.0	19.7	21
12-Jul	36.8	5.4	2.8	1.2	1.8	12.2	16.5	26.5	28.6	45.1	35.4	41.2	36.1	36.3	36.1	39.6	33.4	28.6	26.5	14.9	3.8	0.8	13.6	0.6	22
13-Jul	0.7	3.7	1.4	0.4	1.2	0.3	21.1	31.8	62.2	38.4	65.3	41.1	40.9	43.6	31.2	33.9	30.7	29.8	23.1	10.6	12.7	32.4	16.2	28.9	25
14-Jul	14.9	8.4	5.2	5.8	3.2	2.7	14.7	23.1	31.6	33.5	28.6	29.6	31.2	34.8	41.3	25.4	23.0	23.4	20.4	20.8	5.2	8.8	17.2	12.1	19
15-Jul	11.1	37.1	11.0	9.4	47.2	20.6	11.3	45.8	39.3	40.7	45.6	45.3	55.8	44.4	41.0	30.0	32.6	26.4	25.1	20.4	17.9	19.3	20.0	24.3	30
16-Jul	12.9	11.0	11.6	11.6	9.7	11.4	24.5	25.0	30.4	25.8	33.1	34.3	36.5	39.0	39.0	42.9	28.4	25.3	44.2	24.6	19.7	16.8	13.0	14.7	24
17-Jul	16.3	15.3	17.8	18.1	7.5	3.7	24.3	30.4	42.9	45.8	60.4	52.6	49.3	35.4	22.8	26.1	27.9	23.6	28.2	23.1	20.6	24.3	16.9	17.3	27
18-Jul	11.5	11.1	3.7	3.3	5.8	8.8	27.5	45.1	51.9	46.9	47.6	49.6	61.0	38.0	48.3	57.6	37.2	24.9	49.9	30.6	24.7	24.5	26.9	24.3	32
19-Jul	27.7	19.1	18.9	13.8	11.2	32.6	28.8	38.7	39.0	44.2	42.5	43.3	49.7	45.7	44.3	43.8	40.2	38.0	31.8	8.7	5.7	33.0	26.1	5.1	30
20-Jul	13.1	4.0	5.0	7.0	21.5	17.7	23.9	26.1	27.8	27.0	27.9	30.1	28.0	24.9	25.2	27.8	25.7	25.6	23.8	19.8	20.1	13.8	22.8	8.0	21
21-Jul	1.2	3.0	1.8	5.5	1.4	4.8	31.7	31.4	39.2	38.9	44.2	39.8	45.6	42.4	40.1	37.4	34.0	32.9	28.5	16.9	4.9	2.0	1.2	2.8	22
22-Jul	1.9	5.7	10.1	9.9	7.5	14.0	23.7	31.5	51.1	41.6	47.7	52.3	60.2	57.4	35.1	37.1	37.8	28.2	22.1	18.4	18.2	17.6	18.6	21.3	28
23-Jul	21.9	11.8	19.0	15.3	7.3	4.6	22.3	31.0	35.8	39.7	52.3	37.9	48.0	54.6	40.8	33.3	29.1	25.9	21.8	17.5	18.8	20.3	20.6	19.8	27
24-Jul	15.9	17.4	22.6	23.6	23.5	21.9	29.0	41.6	47.4	43.9	50.4	49.5	54.4	39.1	58.3	37.9	37.3	27.9	22.9	16.0	18.4	20.9	21.0	20.8	32
25-Jul	17.4	17.1	23.2	19.9	20.4	22.2	30.0	42.4	45.2	48.4	37.5	32.5	36.3	30.4	34.8	28.2	24.4	26.3	21.7	18.9	19.8	20.3	20.7	21.9	27
26-Jul	22.8	26.6	25.5	25.2	26.0	32.6	32.2	33.2	38.8	57.2	35.3	36.1	50.6	45.5	38.7	34.4	25.6	15.8	22.4	21.4	19.7	7.8	14.9	4.4	29
27-Jul	12.7	17.1	15.1	18.0	2.3	4.9	22.0	35.5	35.5	39.3	40.6	43.4	40.0	45.7	42.7	25.9	39.6	40.1	19.3	17.1	0.8	0.7	5.4	1.8	24
28-Jul	2.8	8.7	1.8	1.0	3.5	4.6	6.0	33.1	36.4	40.8	36.2	29.8	37.0	34.1	36.4	32.3	28.1	31.0	24.0	14.0	15.9	1.0	1.0	9.0	20
29-Jul	1.9	3.3	5.5	8.9	30.1	16.9	10.6	41.2	43.1	15.7	33.0	32.0	31.0	31.9	29.8	27.8	26.7	25.1	25.7	26.3	25.9	23.9	27.0	25.5	24
30-Jul	29.9	29.1	25.4	24.5	21.8	20.8	22.2	34.3	47.3	33.4	27.4	29.3	30.5	27.5	34.1	24.7	24.4	16.3	20.0	25.0	12.0	24.3	20.9	0.9	25
31-Jul	3.8	7.9	4.5	1.9	10.6	0.1	12.1	17.2	43.6	31.3	34.7	36.3	64.9	46.1	46.5	62.1	58.8	28.9	29.7	24.8	26.0	29.0	33.4	20.6	28
																								<b>Total Hours in Month</b>	744
																								<b>Valid Hours</b>	744
																								<b>Percent Data Captured</b>	100.0%



# Meteorological Report

## The Doe Run Company

### Temperature

Site Name: Rivermines

Average Interval: 01 Hour

Units: Deg. C

Sampling Frequency: 01 Second

2012 Day	Hour																								24 Hour	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max	Avg
1-Jul	27	25	24	23	22	23	27	31	34	37	38	38	39	40	40	38	34	30	28	27	26	26	25	24	40.4	30.3
2-Jul	23	22	22	21	21	22	26	30	32	34	33	35	34	28	27	30	30	28	27	26	25	25	24	23	34.6	26.8
3-Jul	22	23	22	21	21	22	24	25	29	33	35	36	36	37	33	34	34	33	32	31	30	29	28	28	36.7	29.1
4-Jul	27	25	24	23	23	24	27	31	34	36	37	36	39	40	40	40	38	36	33	31	31	31	29	27	40.1	32.3
5-Jul	25	25	24	23	22	23	27	31	34	37	37	38	40	40	41	41	41	40	38	36	35	32	29	27	41.4	32.8
6-Jul	28	25	25	24	24	24	27	32	35	37	39	39	37	29	35	39	37	36	35	32	29	28	26	25	39.2	31.0
7-Jul	24	23	23	23	22	23	27	31	34	37	38	39	39	40	39	40	39	29	24	25	25	24	23	23	40.0	29.7
8-Jul	23	22	22	22	22	22	24	27	31	34	35	35	30	32	36	34	30	26	24	23	22	22	22	22	36.2	26.9
9-Jul	22	22	21	21	21	22	23	25	26	28	28	29	29	28	29	30	29	29	29	27	25	24	22	22	29.6	25.5
10-Jul	21	21	20	20	20	20	23	26	28	30	31	32	32	33	33	33	33	32	32	29	24	22	21	20	33.0	26.5
11-Jul	19	18	18	18	17	18	22	24	27	29	31	33	32	33	34	34	31	29	28	26	24	23	23	22	33.7	25.6
12-Jul	21	20	19	19	18	19	22	26	28	31	32	33	33	34	34	34	34	32	31	29	26	24	23	22	34.2	26.8
13-Jul	21	20	20	19	19	20	23	28	28	29	31	31	31	32	32	32	32	31	30	28	26	25	24	23	32.0	26.4
14-Jul	22	21	21	20	20	20	23	25	27	27	27	28	29	30	30	30	29	29	28	27	25	25	24	23	29.9	25.3
15-Jul	22	21	20	20	20	20	22	24	27	29	30	32	33	34	34	34	34	33	31	30	28	27	27	26	34.1	27.4
16-Jul	25	24	24	23	22	23	27	29	31	30	32	33	33	35	36	37	35	34	27	27	26	26	25	25	36.7	28.7
17-Jul	25	24	24	25	23	23	27	29	32	34	35	36	36	34	32	32	32	32	33	31	30	29	27	27	36.4	29.8
18-Jul	26	25	24	23	23	24	28	31	34	37	38	39	39	39	40	40	37	35	34	32	31	30	29	28	40.2	31.9
19-Jul	27	27	27	28	25	26	30	33	35	36	38	39	40	40	38	39	39	38	37	34	31	31	29	27	39.5	32.9
20-Jul	25	24	24	23	23	23	25	26	27	29	30	31	31	31	31	30	30	30	29	27	26	25	24	23	31.4	27.0
21-Jul	21	20	19	18	18	18	22	25	26	27	29	31	32	33	33	34	33	33	31	29	25	23	21	20	33.5	25.9
22-Jul	19	18	17	17	17	17	21	26	30	32	34	34	36	36	37	37	36	36	34	32	30	29	28	28	36.9	28.5
23-Jul	27	26	26	25	24	24	28	31	33	35	36	37	38	39	39	39	39	38	36	34	33	31	30	29	39.3	32.5
24-Jul	28	28	28	28	27	27	29	32	34	36	38	38	38	39	39	40	40	39	38	35	34	33	31	30	40.0	33.7
25-Jul	29	28	28	28	27	27	30	33	35	37	38	39	40	40	40	40	39	38	37	35	33	32	31	30	40.3	33.9
26-Jul	30	29	29	30	29	29	29	30	31	32	34	34	35	37	33	24	24	24	24	24	23	22	22	22	36.7	28.3
27-Jul	22	22	22	21	21	20	24	27	29	32	35	37	38	39	33	34	37	37	35	30	26	24	22	21	38.8	28.7
28-Jul	20	19	18	17	17	17	21	25	27	29	31	32	33	34	34	34	34	32	31	28	27	23	21	20	34.0	26.0
29-Jul	19	18	19	19	19	19	20	20	20	20	22	23	25	28	30	30	30	28	27	26	25	25	24	24	30.3	23.4
30-Jul	24	24	24	24	24	23	25	28	31	33	33	34	34	34	34	32	31	31	30	28	28	27	26	24	34.3	28.6
31-Jul	22	21	21	20	20	20	23	26	29	31	33	34	35	37	38	39	39	38	36	33	30	28	27	28	38.9	29.4
																								Maximum Hour/Monthly Average	41.4	
																								Total Hours in Month	744	
																								Valid Hours	744	
																								Percent Data Captured	100.0%	
																								28.8		

# Meteorological Report

## The Doe Run Company

### Site Pressure

Site Name: Rivermines

Average Interval: 01 Hour

Units: mmHg

Sampling Frequency: 01 Second

2012 Day	Hour																								24 Hour								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max	Avg							
1-Jul	742	742	741	742	742	743	743	743	743	744	744	744	743	743	742	742	742	742	742	743	743	744	743	743	744	743	744	743	744	743	743	744	743
2-Jul	743	743	743	743	743	744	744	744	744	744	744	745	744	744	744	743	743	744	744	743	743	744	744	744	744	744	744	744	744	744	745	744	744
3-Jul	744	744	744	743	744	744	744	744	744	744	744	744	743	743	742	742	741	741	741	742	742	742	742	742	742	742	742	742	742	744	743	743	
4-Jul	742	742	743	743	743	743	744	744	744	744	744	744	743	743	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	
5-Jul	743	743	743	743	744	744	744	744	744	744	744	744	743	743	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	
6-Jul	743	743	743	744	744	744	744	744	744	744	744	744	744	744	743	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	
7-Jul	744	744	744	744	744	744	744	744	744	744	744	744	743	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	
8-Jul	743	743	744	744	744	744	744	744	744	744	744	744	743	743	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	
9-Jul	745	745	745	744	744	745	745	745	745	745	745	745	745	744	744	744	743	743	743	743	743	743	743	743	743	743	743	743	743	743	743	743	
10-Jul	744	744	744	744	744	745	745	745	745	745	745	745	745	744	744	743	743	743	743	743	743	743	743	743	743	743	743	743	743	743	743	743	
11-Jul	744	745	745	745	745	745	745	745	745	745	745	745	745	744	744	743	743	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	
12-Jul	744	744	744	744	745	745	745	745	745	745	745	745	745	744	744	743	743	743	743	743	743	743	743	743	743	743	743	743	743	743	743	743	
13-Jul	745	745	745	745	745	745	745	745	745	745	745	745	745	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	
14-Jul	745	745	745	745	745	746	746	746	746	746	746	746	746	746	745	745	745	745	744	744	744	744	744	744	744	744	744	744	744	744	744	744	
15-Jul	745	745	745	746	746	746	747	747	747	747	747	747	747	746	745	745	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	
16-Jul	745	745	745	745	745	745	745	745	745	745	745	745	745	744	744	743	743	742	742	742	742	742	742	742	742	742	742	742	742	742	742	742	
17-Jul	743	743	743	742	743	743	743	744	743	743	743	743	742	742	742	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	
18-Jul	742	742	742	742	742	743	743	743	744	743	744	743	743	742	742	742	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	
19-Jul	742	742	742	742	743	743	744	743	743	743	744	743	743	742	742	742	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	
20-Jul	743	743	743	743	743	743	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	
21-Jul	745	745	745	746	746	746	746	746	746	746	746	746	746	746	745	745	745	745	745	744	744	744	744	744	744	744	744	744	744	744	744	744	
22-Jul	746	746	746	746	746	746	746	746	746	746	746	746	746	746	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	
23-Jul	746	746	746	746	746	747	747	747	747	747	747	746	746	746	746	745	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	744	
24-Jul	745	744	744	744	745	745	745	745	745	745	745	744	744	743	742	742	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	
25-Jul	742	742	742	741	742	742	742	742	742	742	742	741	741	740	740	739	739	739	738	738	738	738	738	738	738	738	738	738	738	738	738	738	
26-Jul	739	739	738	739	739	740	740	740	740	740	740	740	739	739	739	739	739	739	740	740	741	741	741	741	741	741	741	741	741	741	741	741	
27-Jul	742	742	742	741	742	742	742	742	743	743	743	743	742	742	741	742	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	
28-Jul	745	745	745	745	746	746	746	747	747	747	747	747	747	746	746	746	745	745	746	746	746	746	746	746	746	746	746	746	746	746	746	746	
29-Jul	746	745	746	746	746	747	747	747	747	747	747	747	746	745	744	744	744	743	743	742	743	743	743	743	743	743	743	743	743	743	743	743	
30-Jul	742	742	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	
31-Jul	742	742	742	742	743	743	743	743	743	743	743	743	743	742	741	741	741	741	740	741	741	741	741	741	741	741	741	741	741	741	741	741	
																								Maximum Hour/Monthly Average		747	744						
																								Total Hours in Month		744							
																								Valid Hours/Percent Data Captured		744	100.0%						

# Meteorological Report

## The Doe Run Company

### Precipitation

Site Name: Rivermines

Average Interval: 01 Hour  
Sampling Frequency: 01 Second

2012 Day	Hour																								24 Hour		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max	Total	
1-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
7-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.54
8-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.17
9-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11
10-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.14
17-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.18
27-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.23	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.29
30-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum Hour/Monthly Total</b>																								0.54	1.44		
<b>Total Hours in Month</b>																								744			
<b>Valid Hours/Percent Data Captured</b>																								744	100.0%		

